6. In apparatus for processing a measured digital color image value originally obtained from an image sensor having color image pixels aligned in rows and columns the image sensor generating at least three separate color values but only one color value for each image pixel location, such apparatus computing the luminance values for each image pixel, comprising:

means for storing the measured digital color image value;

processor means operative with said storing means and responsive to said stored measured digital color image values for computing low frequency luminance values;

means responsive to the computed low frequency luminance values for obtaining Laplacian second-order and gradient values in at least two image orientations from neighboring image pixels;

means for combining the Laplacian second-order and the gradient values to define a value for each image pixel such that there are sets of values with each value corresponding to a classifier and for selecting a preferred orientation from a group of orientations including flat, horizontal, vertical, and first and second diagonal orientations for the interpolation based upon the classifier; and

means responsive to the preferred orientation and the measured digital image for determining the luminance value for each corresponding image pixel.

7. The apparatus of claim 6 further including means for using the smallest classifiers and when the horizontal and vertical classifiers are below a predetermined threshold level for selecting the flat orientation and when the smallest classifier corresponds to the horizontal, vertical, and first and second diagonals for selecting one of those orientations as the preferred orientation.

8. The apparatus according to claim 7 including means responsive to the selected orientation being flat to compute the average of the horizontal and vertical for computing a predictor which is used in determining the luminance value for each corresponding image pixel.

9. In apparatus for processing a measured digital color image value originally obtained from an image sensor having color image pixels aligned in rows and columns the image sensor generating at least three separate color values but only one color value for each image pixel location, such apparatus computing the luminance values for each image pixel, comprising:

means for storing the measured digital color image value;

processor means operative with said storing means and responsive to said stored measured digital color image values for computing low frequency luminance values;

means responsive to the computed low frequency luminance values for obtaining Laplacian second-order and gradient values in at least two image orientations from neighboring image pixels;

means for adding the Laplacian second-order and the gradient values to define a value for each image pixel such that there are sets of values with each value corresponding to a classifier and for selecting a preferred orientation from a group of orientations including flat, horizontal, vertical, and first and second diagonal orientations for the interpolation based upon the classifier; and

means responsive to the preferred orientation and the measured digital image for determining the luminance value for each corresponding image pixel.

10. A computer program, product, comprising a computer readable storage medium including program means comprising:

a) means for processing a digital color image value originally obtained from an image sensor or the like having color image pixels aligned in rows and columns having diagonal pixels with sufficient information to permit luminance estimation the digital image having at least three separate color values but only one color value for each image pixel location; and

b) means for computing the luminance values for each image pixel, including:

i) means for storing the digital image;

ii) processor means operative with said storing means and responsive to said stored measured digital color image values for computing low frequency luminance values;

iii) means responsive to the computed low frequency luminance values for obtaining,Laplacian second-order and gradient values in at least two image orientations from neighboring image pixels;

iv) means for combining the Laplacian second-order and the gradient values to define a value for each image pixel in the kernel such that there are sets of values with each value corresponding to a classifier and for selecting a preferred orientation from a group of orientations for the interpolation based upon the classifier; and

v) means responsive to the preferred orientation and the measured digital image for estimating the luminance value for each corresponding image pixel.

11. In apparatus for processing a digital color image value originally obtained from an image sensor or the like having color image pixels aligned in rows and columns having diagonal pixels with sufficient information to permit luminance estimation the digital image having at least three separate color values but only one color value for each image pixel location, such apparatus computing the luminance values for each image pixel, comprising:

means for storing the digital image;

processor means operative with said storing means and responsive to said stored measured digital color image values for computing low frequency luminance values;

means responsive to the computed low frequency luminance values for obtaining Laplacian second-order and gradient values in at least two image orientations from neighboring image pixels;

means for combining the Laplacian second-order and the gradient values to define a value for each image pixel in the kernel such that there are sets of values with each value corresponding to a classifier and for selecting a preferred orientation from a group of orientations for the interpolation based upon the classifier; and

means responsive to the preferred orientation and the measured digital image for estimating the chrominance value for each corresponding image pixel.

12. The apparatus of claim 1 wherein there are at least two possible selected orientations which include horizontal and vertical.

13. The apparatus of claim 1 wherein there at least four possible selected orientations which include horizontal, vertical, and first and second diagonals.

14. The apparatus of claim 3 further including means for selecting the smallest classifier which determines the selected orientation and corresponds to the predictor.

15. In apparatus for processing a measured digital color image value originally obtained from an image sensor having color image pixels aligned in rows and columns the image sensor generating at least three separate color values